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| APPLICATION NO.                                                                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/763,452                                                                      | 01/23/2004  | Robert L. Terry      | AE-28 / TEC1286-01  | 2037             |
| 832                                                                             | 7590        | 06/10/2005           | EXAMINER            |                  |
| BAKER & DANIELS LLP<br>111 E. WAYNE STREET<br>SUITE 800<br>FORT WAYNE, IN 46802 |             |                      | RO, BENTSU          |                  |
|                                                                                 |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                 |             |                      | 2837                |                  |

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/763,452 | <b>Applicant(s)</b><br>TERRY ET AL. |  |
|                              | <b>Examiner</b><br>Bentsu Ro         | <b>Art Unit</b><br>2837             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-35 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 9, 14-19, 21, 22, 25, 26, 29, 30 and 36-39 is/are rejected.
- 7) ☒ Claim(s) 3-8, 10-13, 20, 23, 24, 27, 28, 31, 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## FINAL REJECTION

1. In response to applicant's REMARKS, filed 5/9/2005, the examiner maintains the same rejection as that of the first office action, paper number 02032005, mailed 2/7/2005, except a further explanation is required as follows:

In the first office action, page 3, first column of the chart, line 4 should be modified as follows:

|                              |                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| disabling the power drivers: | <p>Fig. 25b shows a transistor 422 connected in series with transistors 376; these transistors can be disabled depending on the driving condition of the motor;</p> <p>the transistor 422 is used to disable the motor if the motor is stopped, locked, or underspeeded;</p> <p>any one of the transistors 376 is disabled when back emf is measured;</p> |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Because the modification of the above-mentioned explanation, lines 7-9 should also be modified accordingly.

|                                                                                         |                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| then enabling the power drivers after a time period dependent on the measured back EMF. | <p>if motor runs without locking or underspeed, or stop, the transistor 376 of the next stage will resume conduction;</p> <p>however, if motor is locked or underspeed, the transistor 422 will be OFF to disconnect the power transistor 362 and 364, depending on the measured bembf.</p> |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

2. Applicant's arguments have been fully considered, but they are not convincing. Basically applicant that **"Nowhere does Erdman '866 disclose disabling the power drivers, then measuring the back EMF voltage, and then enabling the power drivers, as called for in Claim 25"**.

First, if the power transistors 362, 364 are not disabled, then the measured voltage will not be a back EMF, instead, the measured voltage will be the power supply voltage. In order to measure back EMF, the power transistor must be OFF. This is a well-known technique.

If applicant argues that *the operational amplifier 382 integrates the back EMF while the power drivers remain enabled to provide power to the motor windings*. Then the examiner will ask applicant "how can this be done???" Under this condition, the integrated voltage will be the power supply voltage, not a back EMF voltage.

Applicant should read Erdman's column 24, lines 23-24, which states **"In the process, the drive signal to the on transistor from driver transistors such as 376 is removed..."**

3. Applicant's amendment to claims 1, 9, 18 and 36 does not overcome the Erdman's teaching as explained previously similar to that of claim 25.

4. Applicant's submission of the requirements for the joint research agreement prior art exclusion under 35 U.S.C. 103(c) on prompted the new ground(s) of rejection under 37 CFR 1.109(b) presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.02(l)(3). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 571 272-2072.

6/8/2005

  
Bentsu Ro  
Senior Examiner  
Art Unit 2837